WATER SUPPLY OUTLOOK
and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS
for
MONTANA

UNITED STATES DEPARTMENT of AGRICULTURE···SOIL CONSERVATION SERVICE.
and
MONTANA AGRICULTURAL EXPERIMENT STATION

Data included in this report were obtained by the agencies named above in cooperation with Federal, State, and private organizations listed on the inside back cover of this report.

AS OF
APR. 1, 1964

UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

To Recipients of Water Supply Outlook Reports:

The climate of the cultivated and populated areas of the West is characterized by relatively dry summer months. Such precipitation as occurs falls mostly in the winter and early spring months when it is of little immediate benefit to growing crops. Most of this precipitation falls as mountain snow which stays on the ground for months, melting later to sustain streamflow during the period of greatest demand during late spring and summer. Thus, nature provides in mountain snow an imposing water storage facility.

The amount of water stored in mountain snow varies from place to place as well as from year to year and accordingly, so does the runoff of the streams. The best seasonal management of variable western water supplies results from advance estimates of the streamflow.

A snow survey consists of a series of about ten samples taken with specially designed snow sampling equipment along a permanently marked line, up to 1000 feet in length, called a snow course. The use of snow sampling equipment provides snow depth and water equivalent values for each sampling point. The average of these values is reported as the snow survey measurement for a snow course.

Snow surveys are made monthly or semi-monthly beginning in January or February and continue through the snow season until April, May or June. Currently more than 1400 western snow courses are measured each year. These measurements furnish the key data for water supply forecasts.

Streamflow forecasts are obtained by a comparison of total or maximum snow accumulation, as measured by snow water equivalent, to the subsequent spring and summer or snowmelt season runoff over a period of years. The snow water equivalent measured in selected snow courses provides most of the index to the streamflow forecast for the following season. More accurate forecasts are usually obtained when other factors such as soil moisture, base flow and spring precipitation are considered and included in the forecast procedure. Early season forecasts assume average climatic conditions through the snowmelt season.

Listed below are the Federal-State-Private Cooperative Snow Survey and Water Supply Forecast reports available for the West which contain detailed information on snow survey measurements, streamflow forecasts, reservoir storage, soil moisture and other guide data to water management and conservation decisions. Soil Conservation Service Reports may be secured from Water Supply Forecasting Unit, Soil Conservation Service, P.O. Box 2807, Portland, Oregon 97208.

PUBLISHED BY SOIL CONSERVATION SERVICE

REPORTS	ISSUED	LOCATION	COOPERATING WITH
RIVER BASINS			
WESTERN UNITED STATES	MONTHLY (FEB.-MAY)	PORTLAND, OREGON	ALL COOPERATORS
BASIC DATA SUMMARY	OCTOBER 1	PORTLAND, OREGON	ALL COOPERATORS
STATES			
ALASKA	MONTHLY (MAR.-MAY)	PALMER, ALASKA	ALASKA S.C.D.
ARIZONA	SEMI-MONTHLY (JAN.15 - APR.1)	PHOENIX, ARIZONA	SALT R. VALLEY WATER USERS ASSOC. ARIZ. AGR. EXP. STATION
COLORADO AND NEW MEXICO	MONTHLY (FEB.-MAY)	FORT COLLINS, COLORADO	COLO. STATE UNIVERSITY COLO. STATE ENGINEER N. MEX. STATE ENGINEER
IDAHO	MONTHLY (JAN.-JUNE)	BOISE, IDAHO	IDAHO STATE RECLAMATION ENGINEER
MONTANA	MONTHLY (JAN.-JUNE)	BOZEMAN, MONTANA	MONT. AGR. EXP. STATION
NEVADA	MONTHLY (JAN.-MAY)	RENO, NEVADA	NEVADA DEPT. OF CONSERVATION AND NATURAL RESOURCES - DIVISION OF WATER RESOURCES
OREGON	MONTHLY (JAN.-JUNE)	PORTLAND, OREGON	OREG. STATE UNIVERSITY OREGON STATE ENGINEER
UTAH	MONTHLY (JAN.-JUNE)	SALT LAKE CITY, UTAH	UTAH STATE ENGINEER
WASHINGTON	MONTHLY (FEB.-JUNE)	SPOKANE, WASHINGTON	WN. STATE DEPT. OF CONSERVATION
WYOMING	MONTHLY (FEB.-JUNE)	CASPER, WYOMING	WYOMING STATE ENGINEER

PUBLISHED BY OTHER AGENCIES

REPORTS	ISSUED	AGENCY
BRITISH COLUMBIA	MONTHLY (FEB.-JUNE)	WATER RESOURCES SERVICE, DEPT. OF LANDS, FOREST AND WATER RESOURCES, PARLIAMENT BLDG., VICTORIA, B.C., CANADA
CALIFORNIA	MONTHLY (FEB.-MAY)	CALIF. DEPT. OF WATER RESOURCES, P.O. BOX 388, SACRAMENTO, CALIF.

WATER SUPPLY OUTLOOK

FEDERAL-STATE-PRIVATE COOPERATIVE SNOW SURVEYS

for

MONTANA

Report Prepared

By

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and

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Issued By

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MONTANA
WATER SUPPLY OUTLOOK
as of
April 1, 1964

* *
* Improvement in the water supply outlook has *
* continued throughout March. With above *
* average snowfall last month, almost all *
* areas in the state can anticipate adequate *
* water supplies. Some limited late season *
* shortages may occur in the Red Rock-Beaver- *
* head, Marias, Milk areas and along Rock *
* Creek and the lower reaches of the Clarks *
* Fork in the Yellowstone drainage. *
* *
* *

West of the Continental Divide, above average snowfall at higher elevations raised streamflow forecasts 5 to 10 percent over those released last month. Many higher elevation snow courses in the heavy snow accumulation areas showed increases of 10 to 15 inches in water content during March. Almost all snow courses showed significant increases. Snow cover is near average on all drainages with the Kootenai at 98 percent, Flathead 108 percent, Clark Fork 106 percent and Bitterroot 109 percent of the 1943-57 average.

The present outlook is for near average streamflow from the Kootenai, Flathead and Bitterroot River drainages. Streams in the Upper Clark Fork area will produce about 10 percent above average runoff for the spring and summer months.

East of the Continental Divide, snow accumulation was near or above average in the mountainous areas during March. Snow cover is now 5 to 10 percent below average in the Missouri River headwaters, with the exception of the Gallatin River where it is 10 percent above average. Along the Main Stem of the Missouri the snow pack is 20 percent above average, dropping to about 10 percent below average in the Sun, Teton and Marias River drainages. In the Yellowstone River drainage the mountain snow pack is about 5 percent below the 1943-57 average.

Streamflow will be 10 to 15 percent below average on the Jefferson and Madison Rivers with some late season shortages anticipated in the Red Rock-Beaverhead area. The Gallatin River will produce about 10 percent above average flow. The three major tributaries to the Missouri River headwaters will have a combined flow about 5 percent below average. Streams tributary to the Missouri between Toston and Great Falls will flow 20 percent above average and provide adequate irrigation supplies.

Farther north the 95 percent average flow forecast for the Sun River will provide sufficient runoff to fill the reservoirs in its drainage. Some shortages can be expected to develop along the Marias and Milk River drainages, where reservoir storage is low and streamflow is forecast about 25 percent below average. Late season irrigation supplies could become very critical along these two streams should above average temperatures and deficient precipitation prevail during the following months.

Above average streamflow forecasts and good carryover storage will provide ample irrigation water supplies in the Musselshell and Judith River drainages.

Irrigation water will be adequate in most of the Yellowstone drainages with some late season shortages along Rock Creek and possibly in the downstream areas of the Clarks Fork drainage. Streamflow in the Yellowstone will be 5 to 10 percent below average on all tributaries with the exception of the Shields, where the spring and summer flow will be about 10 percent above average.

SNOW COURSES AND SOIL MOISTURE STATIONS IN MONTANA

LEGEND

- TOWNS AND CITIES
- 13D04 SNOW COURSE
- 13D04 SOIL MOISTURE STATION
- 13D04 SNOW COURSE & SOIL MOISTURE STATION
- DRAINAGE BOUNDARIES

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE
BOZEMAN, MONTANA

50 25 0 SCALE IN MILES 50 100

REVISED 10-63 S.R.-11,484

INDEX TO MONTANA SNOW COURSES AND SOIL MOISTURE STATIONS

SNOW COURSES

Drainage Basin & Course Name	Number	Elev.	Sec.	Twp.	Range	Record Began	Measuring Dates 1/	Meas. By 2/
COLUMBIA RIVER BASIN								
KOOTENAI RIVER								
Baree Creek	15B11	5500	36	26N	31W	1956	3,4,5,5½	2
Brush Creek	14A04	5000	12	30N	26W	1937	3,4,5	1,2
Red Mountain	15A01	6000	4	36N	29W	1937	3,4,5,5½,6	1,2
Weasel Divide	14A07	5450	8	37N	24W	1937	3,4,5,5½,6	1,2
FLATHEAD RIVER								
Bazzoo Peak	14B03	5150	11	24N	25W	1961	3,4,5	1,5
Big Creek	13B03	6750	7	22N	18W	1941	3,4,5, 6	1,5
Camp Misery	13A17	6400	30	28N	18W	1962	3,4,5,	1,2
Desert Mountain	13A02	5600	24	31N	19W	1937	1,2,3,4,5, 6	1,2
Fatty Creek	13B04	5500	4	22N	18W	1962	3,4,5, 6	1,5
Griffin Creek Divide	14A09	5150	11	28N	25W	1960	3,4,5	1,5
Hall Roaring Divide	14A03	5770	35	32N	22W	1942	1,2,3,4,5,5½,6	2
Holbrook	13B13	4530	18	21N	13W	1951	2,3,4,5	1
Kishenehn	14A06	3890	14	37N	22W	1954	3,4	6
Logan Creek	14A05	4300	34	30N	24W	1937	3,4,5	1,2
Marias Pass	13A05	5250	34	30N	14W	1934	1,2,3,4,5	3
Mineral Creek	13A16	4000	29	35N	17W	1957	3,4,5	6
North Fork Jocko	13B07	6330	3	17N	17W	1941	3,4,5,5½,6	1,5
Spotted Bear Mountain	13B02	7000	23	25N	15W	1948	1,2,3,4,5	1,2
Strawberry Lake	13A10	5600	11	28N	19W	1948	3,4,5	1
Trinkus Lake	13B01	6500	9	25N	17W	1948	3,4,5	1
Twin Creeks	13B11	3580	24	26N	16W	1951	1,2,3,4,5	1,2
Upper Holland Lake	13B05	7000	28	20N	15W	1948	3,4,5	1
CLARK FORK RIVER								
Black Pine	13C13	7100	23	8N	15W	1959	3,4,5	1
Copper Creek	12B10	5700	1	15N	9W	1962	3,4,5	1,2
Cotter Mine	12B11	6200	2	15N	9W	1962	3,4,5	1,2
Coyote Hill	13B10	4200	12	18N	16W	1947	1,2,3,4,5	1,2
El Dorado Mine	13C09	7800	23	8N	12W	1949	3,4	1
Fred Burr Pass	13C11	8000	12	6N	13W	1957	3,4,5	1
Gold Creek Lake	13C10	7200	14	8N	12W	1949	3,4	1
Hoodoo Creek	15C01	6200	9	14N	27W	1937	3,4,5	1,2
Intergaard	13C04	6450	6	5N	13W	1936	2,3,4,5	4
Lubrecht Forest No. 3	13C21	5450	19	13N	14W	1951	1,2,3,4,5	8
Lubrecht Forest No. 4	13C22	4650	23	13N	15W	1951	1,2,3,4,5	8
Lubrecht Forest No. 6	13C08	4040	11	13N	15W	1951	1,2,3,4,5	8
Red Lion	13C12	7100	22	6N	13W	1958	3,4,5	1
Skalkaho Summit	13C03	7260	30	6N	17W	1937	3,4,5,5½,6	1
Slide Rock Mountain	13C02	7100	35	10N	16W	1937	3,4,5	1
Southern Cross	13C05	6500	8	5N	13W	1936	2,3,4	4
Storm Lake	13C07	7780	19	4N	13W	1939	1,2,3,4,5	1
Stuart Mill	13C06	6500	19	5N	13W	1936	2,3,4	4
Stuart Mountain	13C01	7400	6	14N	18W	1936	1,2,3,4,5, 6	8
TV Mountain	14B01	6800	33	15N	19W	1956	1,2,3,4,5	8
BITTERROOT RIVER								
Ambrose	13C16	6480	28	9N	18W	1960	3,4,5	1
East Fork R. S.	13D01	5400	16	2N	17W	1937	3,4	1
Gibbons Pass	13D02	7100	4	2S	19W	1934	1,2,3,4,5,5½,6	1,3
Lost Horse	14C07	5940	5	4N	23W	1960	3,4,5	1
Nez Perce Camp	14D02	5580	19	1S	23W	1937	3,4,5	1
Nez Perce Pass	14D01	6570	25	1S	24W	1937	3,4,5	1
Twin Lakes	14C08	6510	32	5N	23W	1960	3,4,5	1
SASKATCHEWAN RIVER BASIN								
Iceberg Lake No. 3	13A03	5600	1	35N	17W	1922	5	3,9
Josephine Lower No. 9	13A14	4900	22	35N	16W	1955	5	3,9
Mount Allen No. 7	13A07	5700	27	35N	16W	1922	5	3,9
Piegan Pass No. 6	13A06	5500	27	35N	16W	1922	5	3,9
Pitamigan No. 8	13A08	5800	36	36N	17W	1937	5	3,9
MISSOURI RIVER BASIN								
BEAVERHEAD RIVER								
Bloody Dick	13D10	7600	12	8S	16W	1948	3,4,5	1
Carter Creek	12D04	7400	22	8S	7W	1963	3,4	1
Gold Stone	13D09	8100	11	8S	16W	1948	3,4,5	1
Lakeview Canyon	11E04	6930	26	14S	2W	1948	3,4,5	10
Lakeview Ridge	11E03	7400	27	14S	2W	1948	3,4,5	10
Lemhi Pass	13E01	7480	9	10S	15W	1948	3,4	1
Trail Creek	13E02	7090	15	10S	15W	1948	3,4	1
White Pine Ridge	12E01	8850	18	14S	9W	1948	3,4,5	1
RUBY RIVER								
Clover Meadow	11D08	8600	28	9S	2W	1963	3,4,5	1
Divide	12E07	7900	14	12S	4W	1963	3,4,5	1
Notch	12E06	8500	18	11S	4W	1963	3,4,5	1
BIG HOLE RIVER								
Abundance Lake	13D20	8800	7	3S	11W	1963	3,4,5	1
Darkhorse Lake	13D19	8600	4	8S	16W	1963	3,4,5	1
Elk Horn Springs	13D15	7800	21	4S	12W	1935	3,4,5	3
Foolhen	13D21	8500	11	1S	13W	1963	3,4,5	1
Jahnke Creek	13D08	7340	25	7S	16W	1948	3,4,5	1
JEFFERSON RIVER								
Berry Meadow	12D07	7300	17	5N	5W	1962	3,4,5	1
Picnic Grounds	12D06	6500	10	5N	6W	1941	2,3,4	4
Pipestone Pass	12D01	7200	10	1N	7W	1938	1,2,3,4,5	1
MADISON RIVER								
Call Road	11D07	8050	21	8S	2W	1962	3,4,5	1
Crockett Lake	11D06	8400	20	8S	2W	1962	3,4,5	1
Hebgen Dam	11E05	6550	22	11S	3E	1934	1,2,3,4,5	3
Jack Creek	11D05	6800	13	6S	1E	1961	3,4	1
North Meadow	11D03	7500	23	3S	3W	1961	3,4	1
West Yellowstone	11E07	6700	34	13S	5E	1934	1,2,3,4,5	3

Drainage Basin & Course Name	Number	Elev.	Sec.	Twp.	Range	Record Began	Measuring Dates 1/	Meas. By 2/
GALLATIN RIVER								
Arch Falls	10D14	7350	3	5S	6E	1963	2,3,4,5	1
Bear Basin	11D09	8150	9	6S	3E	1963	3,4,5	1
Devil's Slide	10D04	6100	14	5S	6E	1935	2,3,4,5, 6	1
Hood Meadow	10D03	6600	22	4S	6E	1935	2,3,4,5	1
Little Park	11D10	7400	22	6S	3E	1963	3,4,5	1
New World	10D01	6700	24	3S	6E	1939	2,3,4	1
Twenty-One Mile	11E06	7150	1	11S	5E	1934	1,2,3,4,5	3
MISSOURI RIVER MAIN STEM								
Boulder Mountain	11C01	7950	1	9N	3E	1963	3,4	1
Chessman Reservoir	12C05	6200	2	8N	5W	1936	1,2,3,4,5	3
Crystal Lake	9C01	6100	19	12N	18E	1941	3,4	1
Elk Peak	10C07	8000	10	8N	8E	1963	3,4,5	1
Grasshopper	10C02	7000	19	9N	8E	1938	3,4	1
Kings Hill	10C01	7500	34	13N	8E	1934	3,4,5	3
Rocky Boy	9A01	5200	15	28N	16E	1941	3,4	7
Steeple Pass	12C01	6900	16	13N	7W	1934	3,4,5	3
Ten Mile Lower	12C02	6250	13	8N	6W	1935	1,2,3,4,5	3
Ten Mile Middle	12C03	6800	13	8N	6W	1934	1,2,3,4,5	3
Ten Mile Upper	12C04	8000	19	8N	5W	1935	1,2,3,4,5	3
SUN-TETON-MARIAS RIVERS								
Cabin Creek	12B06	5400	33	23N	10W	1949	3,4,5	1
Five-Bull	12B09	5600	36	20N	10W	1948	3,4	1
Freight Creek	12A01	6000	13	29N	10W	1948	3,4,5	1
Goat Mountain	12B07	7000	20	22N	10W	1934	3,4,5	3
Waldron Creek	12B02	5600	16	25N	9W	1948	3,4,5	1
West Fork	12B01	6000	6	25N	9W	1948	3,4,5	1
Wrong Creek	12B04	5700	32	25N	10W	1949	3,4,5	1
Wrong Ridge	12B03	6800	17	25N	10W	1949	3,4,5	1
JUDITH RIVER								
Spur Park	10C06	8000	20	12N	9E	1963	3,4,5	1
UPPER YELLOWSTONE RIVER								
Bald Ridge	10C05	7500	11	4N	10E	1961	3,4,5	1
Camp Seula	9D01	7890	2	8S	18E	1937	3,4,5	1
Crevice Mountain	10D05	8400	22	9S	9E	1935	3,4	2
Grizzly Peak	9D05	8400	26	7S	19E	1961	1,2,3,4,5	1
Independence	10D06	8000	22	7S	12E	1940	3,4,5	1
Monument Peak	10D12	9000	22	7S	12E	1961	3,4,5	1
Northeast Entrance	10D07	7400	33	9S	14E	1937	1,2,3,4,5	6
Porcupine R. S.	10C03	6500	10	4N	10E	1938	3,4,5	1
Timberline Creek	9D04	8850	10	8S	18E	1961	3,4,5	1
Sacajawea	10D10	6550	36	2N	6E	1960	3,4,5	1
West Rosebud	9D02	7500	9	7S	16E	1960	3,4	4

SOIL MOISTURE STATIONS

Drainage Basin & Course Name	Number	Elev.	Sec.	Twp.	Range	Record Began	Measuring Dates 1/	Meas. By 2/
COLUMBIA RIVER BASIN								
FLATHEAD RIVER								
Desert Mountain	13A02M	5600	24	31N	19W	1956	Monthly	1
Marias Pass	13A05M	5250	34	30N	14W	1950	Monthly	1
CLARK FORK RIVER								
Georgetown Lake	13C13M	6450	6	5N	13W	1962	Monthly	1
Lubrecht Forest	13C14M	4100	11	13N	15W	1961	Monthly	8
Seeley Lake	13B19M	4030	21	17N	15W	1963	Monthly	2
BITTERROOT RIVER								
Gibbons Pass	13D18M	7100	4	2S	19W	1962	Monthly	1
Lolo Pass	14D05M	5250	11	10N	24W	1963	Monthly	1
MISSOURI RIVER BASIN								
BEAVERHEAD RIVER								
Lakeview	11E13M	6700	23	14S	2W	1962	Monthly	10
MADISON RIVER								
Red Bluff	11D04M	4800	7	3S	1E	1961	Monthly	7
GALLATIN RIVER								
College Site	11D02M	4856	18	2S	5E	1956	Monthly	1
Twenty-One Mile	11E06M	7150	1	11S	5E	1963	Monthly	6
MISSOURI RIVER MAIN STEM								
Steeple Pass	12C08M	6350	16	13N	7W	1963	Monthly	1
Kings Hill	10C01M	7420	34	13N	8E	1963	Monthly	1
YELLOWSTONE RIVER								
Battle Ridge	10D11M	6080	32	2N	7E	1960	Monthly	1
Northeast Entrance	10D07M	7350	33	9S	14E	1962	Monthly	6
Shields River	10C04M	5850	4	1N	10E	1960	Monthly	1

LEGEND

1/ Numerals 1,2,3,4,5,5½,6 refer to January 1, February 1, March 1, April 1, May 1, May 15 and June 1.

2/ Numerals refer to Agency that secures the snow survey as follows:

1. Soil Conservation Service
2. U. S. Forest Service
3. U. S. Geological Survey
4. Montana Power Company
5. U. S. Indian Service
6. National Park Service
7. Montana Experiment Station
8. Montana State Forestry School
9. Dominion Water & Power Bureau
10. Bureau of Sport Fisheries & Wildlife

M - Soil Moisture

WATER SUPPLY FORECASTS

AS OF APRIL 1, 1964

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
	COLUMBIA RIVER BASIN					
	KOOTENAI RIVER					
3030	Libby (at)	Apr-Sept	7750	100	7004	7723
		Apr-July	6730	100	5987	6694
3050	Leonia (at)	Apr-Sept	8920	100	8001	8907
		Apr-July	7860	100	6854	7817
	NORTH FORK FLATHEAD RIVER					
3555	Columbia Falls (near)	Apr-Sept	1900	98	1619	1942
		Apr-July	1735	98	1470	1769
		Apr-June	1460	98	1179	1491
	MIDDLE FORK FLATHEAD RIVER					
3585	West Glacier (near)	Apr-Sept	1850	98	1486	1882
		Apr-July	1710	98	1368	1747
		Apr-June	1460	98	1129	1487
	SOUTH FORK FLATHEAD RIVER					
3625	Columbia Falls (nr)(17)	Apr-Sept	2382	104	1655	2297
		Apr-July	2270	104	1568	2180
		Apr-June	1980	104	1379	1901
	FLATHEAD RIVER					
3630	Columbia Falls (at)(17)	Apr-Sept	6295	100	4989	6299
		Apr-July	5822	100	4583	5846
		Apr-June	5008	100	3808	4993
3720	Polson (near)(18)	Apr-Sept	7540	101	5702	7463
		Apr-July	6980	101	5260	6939
		Apr-June	5950	101	4393	5896
	SWAN RIVER					
3700	Big Fork (near)	Apr-Sept	686	107	533	641
		Apr-July	610	107	472	568
		Apr-June	495	107	393	460
	BLACKFOOT RIVER					
3400	Bonner (near)	Apr-Sept	1092	109	723	1000
		Apr-July	985	108	638	907
		Apr-June	841	108	542	775
	FLINT CREEK					
3301	Boulder Creek (below)(13)	Apr-Sept	83.6	112	67.6	74.6
		Apr-July	68.5	112	52.4	61.2
	MIDDLE FORK ROCK CREEK					
3320	Philipsburg (near)	Apr-Sept	87.9	110		80.2
		Apr-July	79.8	110		72.1

(13) Sum, Flint Creek at Maxville and Boulder Creek at Maxville.
(17) Corrected for storage in Hungry Horse Reservoir.
(18) Corrected for storage in Hungry Horse Reservoir and Flathead Lake.

* PROVISIONAL DATA FURNISHED BY U.S. GEOLOGICAL SURVEY

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD).

WATER SUPPLY FORECASTS

AS OF APRIL 1, 1964

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
	CLARK FORK RIVER					
3404	Milltown (above)(14)	Apr-Sept	908	111	706	815
		Apr-July	795	111	614	716
		Apr-June	675	111	510	609
3405	Missoula (above)	Apr-Sept	2000	110	1430	1814
		Apr-July	1781	110	1252	1620
		Apr-June	1516	110	1052	1384
3530	Missoula (below)	Apr-Sept	3550	106	2720	3361
		Apr-July	3229	106	2456	3059
		Apr-June	2756	106	2088	2608
3545	St. Regis (at)	Apr-Sept	4828	106	3492	4549
		Apr-July	4415	107	3118	4140
		Apr-June	3803	107	2640	3550
3890	Plains (near)(18)	Apr-Sept	12700	103	9431	12337
		Apr-July	11650	103	8569	11316
		Apr-June	9950	103	7154	9625
3920	Whitehorse Rapids (at)(19)	Apr-Sept	14450	104	10459	13932
		Apr-July	13250	104	9469	12763
		Apr-June	11270	104	7933	10816
	WEST FORK BITTERROOT RIVER					
3425	Conner (near)(15)	Apr-Sept	180	102		176
		Apr-July	167	102		164
	BITTERROOT RIVER					
3440	Darby (near)	Apr-Sept	588	100	532	587
		Apr-July	550	100	490	547
		Apr-June	479	100	422	477
3528	Missoula (at)(16)	Apr-Sept	1550	100	1291	1557
		Apr-July	1448	100	1204	1450
		Apr-June	1240	100	1037	1244
	BLODGETT CREEK					
3475	Corvallis (near)	Apr-Sept	45.5	98		46.7
		Apr-July	43.5	98		44.4

(14) Difference in observed flow, Clark Fork above Missoula & Blackfoot near Bonner.
(15) Corrected for storage in Painted Rocks Reservoir.
(16) Difference in observed flow, Clark Fork above and below Missoula.
(18) Corrected for storage in Hungry Horse Reservoir and Flathead Lake.
(19) Corrected for storage in Hungry Horse, Flathead Lake and Noxon Reservoirs.

* PROVISIONAL DATA FURNISHED BY U.S. GEOLOGICAL SURVEY

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD).

WATER SUPPLY FORECASTS

AS OF APRIL 1, 1964

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
	MISSOURI RIVER BASIN					
	RED ROCK RIVER					
0110	Kennedy Ranch (at)	Apr-Sept	65.3	85	54.5	76.6
		Apr-July	60.0	85	49.6	70.8
0125	Monida (near)(1)	Apr-Sept	73.0	84	60.0	86.4
		Apr-July	69.1	84	57.6	82.2
	BIG HOLE RIVER					
0255	Melrose (near)	Apr-Sept	709	92	681	770
		Apr-July	656	92	636	714
	BOULDER RIVER					
0330	Boulder (near)	Apr-Sept	95.4	119	81.3	79.9
		Apr-July	91.3	119	78.3	76.5
	JEFFERSON RIVER					
0345	Sappington (at)	Apr-Sept	962	89	972	1074
		Apr-July	855	89	871	958
	MADISON RIVER					
0375	West Yellowstone (near)	Apr-Sept	191	89	209	216
		Apr-July	147	89	161	165
0385	Grayling (near)(2)	Apr-Sept	408	91	430	448
		Apr-July	325	91	331	357
0410	McAllister (near)(3)	Apr-Sept	690	91	722	756
		Apr-July	556	91	565	613
	GALLATIN RIVER					
0435	Gateway (near)	Apr-Sept	523	114	455	459
		Apr-July	450	114	385	395
	HYALITE CREEK					
0500	Bozeman (near)(4)	Apr-Sept	41.6	115	39.4	36.1
		Apr-July	36.1	116	34.3	31.0
	GALLATIN RIVER					
0525	Logan (at)	Apr-Sept	552	112	511	492
		Apr-July	473	112	439	422

(1) Corrected for storage in Lima Reservoir.
(2) Corrected for storage in Hebgen Lake.
(3) Corrected for storage in Hebgen and Ennis Lakes.
(4) Corrected for storage in Middle Creek Reservoir.

* PROVISIONAL DATA FURNISHED BY U.S. GEOLOGICAL SURVEY

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD).

WATER SUPPLY FORECASTS

AS OF APRIL 1, 1964

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
	MISSOURI RIVER					
0545	Toston (at)(3)	Apr-Sept	2224	95	2199	2342
		Apr-July	1926	95	1917	2030
0908	Fort Benton (at)(5)	Apr-Sept	3358	93		3599
		Apr-July	2861	93		3076
1095	Virgelle (at)(6)	Apr-Sept	3943	90		4393
		Apr-July	3411	90		3803
1150	Zortman (near)(6)	Apr-Sept	4340	90		4806
		Apr-July	3720	90		4143
1320	Fort Peck Dam (below)(7)	Apr-Sept	4220	89		4761
		Apr-July	3730	89		4181
1770	Wolf Point (near)(7)	Apr-Sept	4660	89		5261
		Apr-July	4125	89		4652
3300	Williston, N.D. (near)(8)	Apr-Sept	10750	86	10687	12499
		Apr-July	9500	86	9590	11085
	PRICKLY PEAR CREEK					
0615	Clancy (near)	Apr-Sept	28.4	119	19.4	23.9
		Apr-July	24.8	119	17.0	20.8
	SUN RIVER					
0786	Gibson Dam (at)(10)	Apr-Sept	548	93	387	588
		Apr-July	503	93	343	538
	MARIAS RIVER					
0995	Shelby (near)	Apr-Sept	510	77	310	659
		Apr-July	470	78	288	605
	SOUTH FORK MUSSELSHELL R.					
1185	Martinsdale (above)	Apr-Sept	65.0	121	45.0	53.6
		Apr-July	62.7	122	43.1	51.4
	MILK RIVER					
1350	Eastern Crossing (at)	Apr-Sept	172	74	227	234

(3) Corrected for storage in Hebgen and Ennis Lakes.
(5) Corrected for storage in Canyon Ferry Reservoir.
(6) Corrected for storage in Canyon Ferry and Tiber Reservoirs.
(7) Corrected for storage in Canyon Ferry, Tiber and Fort Peck Reservoirs.
(8) Corrected for storage in Canyon Ferry, Tiber, Fort Peck, Buffalo Bill and Boysen Reservoirs.
(10) Corrected for storage in Gibson Reservoir and diversions.

* PROVISIONAL DATA FURNISHED BY U.S. GEOLOGICAL SURVEY

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD).

WATER SUPPLY FORECASTS

AS OF APRIL 1, 1964

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
	YELLOWSTONE RIVER					
1915	Corwin Springs (at)	Apr-Sept	1860	94	1935	1980
		Apr-July	1555	94	1638	1649
1925	Livingston (near)	Apr-Sept	2130	95	2128	2252
		Apr-July	1765	95	1791	1863
2145	Billings (at)	Apr-Sept	3927	92	3976	4261
		Apr-July	3374	92	3482	3657
3090	Miles City (at)(12)	Apr-Sept	5621	83	6301	6721
		Apr-July	4900	83	5653	5883
3295	Sidney (near)(12)	Apr-Sept	5704	82		6921
		Apr-July	5000	82		6136
	SHIELDS RIVER					
1935	Clyde Park (at)	Apr-Sept	124	112	101	111
		Apr-July	115	112	93.5	103
	BOULDER RIVER					
2000	Big Timber (at)	Apr-Sept	358	92	312	387
		Apr-July	329	92	300	353
	STILLWATER RIVER					
2050	Absarokee (near)(11)	Apr-Sept	570	92	610	620
		Apr-July	482	92	524	523
	CLARKS FORK RIVER					
2075	Chance (at)	Apr-Sept	555	90	593	617
		Apr-July	495	90	546	552
2085	Edgar (at)	Apr-Sept	579	89	617	652
		Apr-July	510	89	559	575
	ROCK CREEK					
2095	Red Lodge (near)	Apr-Sept	103	92	111	112
		Apr-July	79.2	92	88.4	86.3

(11) Corrected for storage in Mystic Lake.
(12) Corrected for storage in Buffalo Bill and Boysen Reservoirs.

*PROVISIONAL DATA FURNISHED BY U.S. GEOLOGICAL SURVEY

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD).

SNOW SURVEY DATA

AS OF APRIL 1, 1964

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
			DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
NO.	NAME	ELEVATION				LAST YEAR	AVERAGE
	COLUMBIA RIVER BASIN						
KOOTENAI RIVER							
15B11	Baree Creek	5500	3/31	137	56.3	31.7	48.7*
14A04	Brush Creek	5000	4/1	39	13.4	6.8	15.2*
BC 10	Fernie	3500	3/31	28	9.3	0.0	9.3
BC 12A	Field	4200	4/1	15	3.1	4.3	5.2
BC 43	Gray Creek	5100	3/30	58	18.6	13.5	19.8*
BC 33	Kicking Horse	5400	3/31	41	13.5	14.2	14.9*
BC 20B	Kimberley	3800	3/30	24	7.7	3.5	6.8
BC 32	Marble Canyon	5000	4/1	46	12.7	11.1	13.9*
BC 10B	Morrissey Ridge	6100				23.8	-
BC 10A	New Fernie	4100	3/31	47	16.2	7.9	15.4*
15A01	Red Mountain	6000	3/24	58	18.0	13.1	21.5
BC 8A	Sinclair Pass	4500	4/1	19	4.1	1.5	6.0
BC 20A	Sullivan Mine	5100	3/31	40	11.9	9.7	15.4*
BC 41	Upper Elk River	4400	3/24	23	6.4	1.0	8.3*
14A07	Weasel Divide	5450	3/25	96	36.8	25.2	33.4
FLATHEAD RIVER							
14B03	Bassoo Peak	5150	3/30	37	11.6	5.9	-
13A11	Beaver Lake	5900	3/30	65	22.8	-	-
13B03	Big Creek	6750	4/2	117	47.4	43.0	43.4
13A17	Camp Misery	6400	3/31	134	51.1	35.3	-
13A02	Desert Mountain	5600	3/30	52	17.2	11.0	16.6
13B04	Fatty Creek	5500	4/2	74	26.6	16.8	-
14A09	Griffin Creek Divide	5150	4/1	37	11.8	6.6	-
13B12	Gunsight Lake	6300	3/30	108	41.0	-	-
14A03	Hell Roaring Divide	5770	3/31	98	35.8	24.8	31.7
13B13	Holbrook	4530	3/30	34	13.8	4.7	10.1*
14A06	Kishenehn	3890	3/30	37	10.6	3.4	10.8
14A05	Logan Creek	4300	4/1	28	8.2	4.2	9.8
13A05	Marias Pass	5250	3/28	55	16.4	9.2	20.3
13A16	Mineral Creek	4000	4/1	61	22.8	11.6	23.9*
13B07	North Fork Jocko	6330	4/3	128	53.3	37.0	44.4
13B02	Spotted Bear Mountain	7000	3/30	48	17.3	8.0	15.6*
13A10	Strawberry Lake	5600	3/31	116	44.8	28.7	42.5*
13B01	Trinkus Lake	6500	3/31	113	46.3	31.2	41.5*
13B11	Twin Creeks	3580	3/27	53	16.0	3.6	10.6*
13B05	Upper Holland Lake	7000	3/31	100	39.0	25.8	34.3*

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SNOW SURVEY DATA

AS OF APRIL 1, 1964

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
			DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
NO.	NAME	ELEVATION				LAST YEAR	AVERAGE
CLARK FORK RIVER							
13C13	Black Pine	7100	4/1	47	16.0	13.6	-
12B10	Copper Creek	5700	3/30	46	15.6	8.1	-
12B11	Cotter Mine	6250	3/30	51	17.6	8.8	-
13B10	Coyote Hill	4200	4/2	31	10.8	7.2	10.6*
13C09	El Dorado Mine	7800	3/31	68	22.2	20.6	22.7*
13C11	Fred Burr Pass	8000	4/3	79	27.2	26.0	28.1*
13C10	Gold Creek Lake	7200	3/31	54	18.1	13.9	17.2*
15C01	Hoodoo Creek	6200	4/2	124	49.8	32.8	53.2
13C04	Intergaard	6450	4/1	30	9.5	8.7	7.9*
15B02	Lookout	5250	3/30	113	41.6	24.1	39.3*
13C21	Lubrecht Forest No. 3	5450	3/29	33	8.5	5.8	5.9*
13C22	Lubrecht Forest No. 4	4650	3/29	20	5.6	1.1	2.4*
13C08	Lubrecht Forest No. 6	4040	3/29	21	6.0	1.3	2.5*
13C12	Red Lion	7100	4/3	54	17.2	16.2	18.0*
13C03	Skalkaho Summit	7260	4/1	74	26.4	21.2	27.1
13C02	Slide Rock Mountain	7100	4/2	50	16.4	14.2	15.9
13C05	Southern Cross	6500	4/1	25	8.0	7.2	5.9*
13C18	Spring Gulch	6000	3/28	56	15.9	9.0	-
13C07	Storm Lake	7780	4/3	46	14.6	14.0	15.6
13C06	Stuart Mill	6500	4/1	27	7.6	7.3	6.9*
13C01	Stuart Mountain	7400	3/28	93	34.4	29.0	32.8
14B01	TV Mountain	6800	3/27	70	19.6	16.6	19.0*
BITTERROOT RIVER							
13C16	Ambrose	6480	4/1	42	14.4	13.2	-
13D01	East Fork R. S.	5400	3/27	36	8.6	5.8	7.1
13D02	Gibbons Pass	7100	3/30	70	23.3	16.6	25.4
14D03	Kit Carson	5020	3/30	35	12.4	4.3	9.0
14C05	Lolo Pass	5230	3/26	100	36.6	21.8	36.7*
14C07	Lost Horse	5940	3/31	101	39.6	20.3	-
13D16	Moose Creek	6200	3/27	63	20.5	8.4	17.7
14D02	Nez Perce Camp	5580	3/30	57	19.9	8.9	15.5
14D01	Nez Perce Pass	6570	3/30	58	21.0	9.7	19.7
14C06	Powell R. S.	4230	3/26	53	19.5	6.4	14.0*
14C04	Savage Pass	6600	3/27	89	31.6	21.8	30.3*
14C08	Twin Lakes	6510	3/31	120	47.6	31.8	-

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SNOW SURVEY DATA

AS OF APRIL 1, 1964

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
						WATER CONTENT	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE
			MISSOURI RIVER BASIN				
BEAVERHEAD RIVER							
13D10	Bloody Dick	7600	3/31	36	10.6	8.2	12.1*
11E11	Blue Ledge Mine	6700	3/27	47	14.5	7.2	17.3
12E03	Camp Creek	6800	3/26	34	9.1	2.3	10.4
12D04	Carter Creek	7400	3/28	21	4.9	3.4	-
13D15	Elk Horn Springs	7800	3/31	33	8.3	8.4	10.7*
13D09	Gold Stone	8100	3/31	45	14.7	12.8	15.8*
11E12	Kolgore	6200	3/27	35	11.0	4.2	10.3
11E04	Lakeview Canyon	6930	3/27	40	9.3	6.4	11.3*
11E03	Lakeview Ridge	7400	3/27	39	8.6	5.6	10.1*
13E01	Lemhi Pass	7480	3/30	35	9.0	5.8	9.6*
13E02	Trail Creek	7090	3/30	33	8.4	5.7	9.1*
12E01	White Pine Ridge	8850	3/30	22	6.8	4.0	6.2*
RUBY RIVER							
11D08	Clover Meadow	8600	3/30	55	16.8	13.0	-
12E07	Divide	7900	3/30	36	10.4	6.8	-
12E06	Notch	8500	3/30	48	13.8	11.3	-
BIG HOLE RIVER							
13D20	Abundance Lake	8800	3/30	57	20.6	14.2	-
13D19	Darkhorse Lake	8600	3/30	78	26.4	20.5	-
13D21	Foolhen	8500	3/30	52	17.5	14.0	-
13D08	Jahnke Creek	7340	3/31	30	8.6	5.1	11.7*
JEFFERSON RIVER							
12C07	Berry Meadow	7300	4/3	30	7.4	8.4	-
12C06	Picnic Grounds	6500	4/1	19	5.1	4.6	5.3*
12D01	Pipestone Pass	7200	4/2	18	4.0	6.0	6.0

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SNOW SURVEY DATA

AS OF APRIL 1, 1964

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
			DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
NO.	NAME	ELEVATION				LAST YEAR	AVERAGE
MADISON RIVER							
11E09	Big Springs	6500	3/30	65	21.8	10.4	23.6
11D07	Call Road	8050	3/30	44	12.7	9.7	-
11D06	Crockett Lake	8400	3/30	41	12.2	10.8	-
11E05	Hebgen Dam	6550	3/28	48	13.6	7.3	12.6
11E10	Island Park	6315	3/30	51	15.9	8.8	17.8
11D05	Jack Creek	6800	4/2	20	4.3	5.2	-
10E02	Norris Basin	7500	3/30	41	11.1	8.0	10.3*
11D03	North Meadow	7500	4/1	24	6.4	6.6	-
11E08	Valley View	6500	3/30	58	19.4	9.0	16.9
11E07	West Yellowstone	6700	3/28	42	11.0	6.1	12.7
GALLATIN RIVER							
10D14	Arch Falls	7350	3/28	48	14.2	12.2	-
11D09	Bear Basin	8150	3/26	72	22.6	18.4	-
10D04	Devil's Slide	8100	3/28	83	25.6	22.4	21.2
10D03	Hood Meadow	6600	3/27	43	12.6	9.2	9.8
11D10	Little Park	7400	3/26	59	17.6	13.6	-
10D01	New World	6700	3/25	48	14.6	11.0	10.9
11E06	Twenty-One Mile	7150	3/27	62	18.5	9.0	19.2
MISSOURI RIVER (Main Stem)							
11C01	Boulder Mountain	7950	4/6	63	21.2	13.8	-
12C05	Chessman Reservoir	6200	4/2	25	7.4	1.4	5.1
9C01	Crystal Lake	6100	4/2	51	17.7	17.3	11.8
10C07	Elk Peak	8000	3/31	55	19.4	14.4	-
10C02	Grasshopper	7000	3/31	30	8.4	4.0	5.6
10C01	Kings Hill	7500	4/1	53	16.7	8.3	13.8
9A01	Rocky Boy	5200	3/31	20	6.3	4.7	5.2
12C01	Stemple Pass	6600	3/30	44	12.9	7.2	11.0
12C02	Ten Mile Lower	6600	4/1	28	8.0	6.1	7.1
12C03	Ten Mile Middle	6800	4/1	41	12.5	10.9	11.3
12C04	Ten Mile Upper	8000	4/1	49	16.7	14.4	14.4
SUN-TETON-MARIAS RIVERS							
13A15	Badger Pass	6900	3/30	99	39.6	-	-
12B06	Cabin Creek	5200	3/30	27	8.9	0.0	7.1*
12B09	Five-Bull	5700	3/31	20	5.8	-	7.5*

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD). *ADJUSTED AVERAGE

SNOW SURVEY DATA

AS OF APRIL 1, 1964

(Inches)

SNOW COURSE NO.	SNOW COURSE NAME	ELEVATION	CURRENT DATA: DATE OF SURVEY	CURRENT DATA: SNOW DEPTH	CURRENT DATA: WATER CONTENT	PAST RECORD: WATER CONTENT: LAST YEAR	PAST RECORD: WATER CONTENT: AVERAGE
SUN-TETON-MARIAS RIVERS (cont'd)							
12A01	Freight Creek	6000	3/30	45	15.2	9.9	17.4*
12B07	Goat Mountain	7000	3/31	39	11.5	6.0	12.4
12B02	Waldron Creek	5300	3/30	25	7.5	2.8	7.7*
12B01	West Fork	6000	3/30	43	14.2	8.9	17.7*
12B04	Wrong Creek	5700	3/30	48	16.8	8.8	16.2*
12B03	Wrong Ridge	6800	3/30	61	22.0	13.7	23.1*
JUDITH RIVER							
10C06	Spur Park	8000	4/1	70	25.4	17.4	-
SASKATCHEWAN (BOW) RIVER							
ALB. 1	Bow River	5100	4/1	28	5.4	5.8	8.7
ALB. 2	North Course	5400	3/31	29	6.0	6.0	8.9
ALB. 3	Pipestone River	5100	Discontinued			5.1	6.6
ALB. 5	Lake Louise	5800	4/1	29	7.4	8.0	11.2
ALB. 6	Mirror Lake	6600	4/1	36	7.6	8.6	12.5
ALB. 8	Miscl. Lake Louise	5700	3/31	33	7.0	7.4	11.1
ALB. 9	Forty Mile Creek	5500	Discontinued			4.1	7.5*
UPPER YELLOWSTONE RIVER							
10C05	Bald Ridge	7500	3/30	48	14.8	9.6	-
9D01	Camp Senia	7890	4/3	34	6.6	5.8	7.3
10E03	Canyon	7750	3/31	51	16.1	12.3	16.0
10D05	Crevice Mountain	8400	3/31	39	10.6	8.2	10.5
10E06	East Entrance	7000	3/30	37	11.6	7.7	11.9*
9D05	Grizzly Peak	8400	4/2	42	12.7	14.9	-
10D06	Independence	8000	3/27	59	18.0	15.4	18.4*
10E04	Lake Camp	7850	3/30	36	9.1	4.6	12.3*
9E01	Lodgepole	8200	3/31	38	11.8	9.4	13.1*
10E01	Lupine Creek	7300	3/31	36	8.7	4.4	11.6*
10D12	Monument Peak	9000	3/27	78	24.6	19.8	-
10D07	Northeast Entrance	7400	3/30	34	9.6	7.4	9.5
10C03	Porcupine R. S.	6500	3/30	38	10.5	6.7	7.1
10D10	Sacajawea	6550	3/25	49	15.0	13.8	-
10E05	Sylvan Pass	7100	3/30	46	14.7	10.5	15.9*
10E07	Thumb Divide	7900	3/28	65	19.0	12.9	25.4*
9D04	Timberline Creek	8850	4/3	63	15.8	11.0	-

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD). *ADJUSTED AVERAGE

SOIL MOISTURE DATA

AS OF APRIL 1, 1964

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
NO.	NAME	ELEVATION	DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	**AVERAGE
			COLUMBIA RIVER BASIN					
Flathead								
13A02M	Desert Mountain	5600	54	8.4	3/30	5.9	7.8	7.6
13A05M	Marias Pass	5250	54	6.5	3/30	4.5	6.0	5.5
Clark Fork								
13C15M	Georgetown Lake	6450	48	8.3	4/2	2.5	3.0	-
13B19M	Seeley Lake	4030	48	10.6	4/3	3.0	-	-
Bitterroot								
13D18M	Gibbons Pass	7100	48	7.1	3/27	5.5	5.8	-
14C05M	Lolo Pass	5250	48	8.5	3/30	5.8	-	-
			MISSOURI RIVER BASIN					
Beaverhead								
11E13M	Lakeview	6700	48	15.3	3/31	8.8	8.7	-
Madison								
10D04M	Red Bluff	4800	40	4.7	4/1	3.3	2.8	-
Gallatin								
11D02M	College Site	4856	54	14.5	4/3	12.1	14.1	11.1
11E06M	Twenty-One Mile	7150	48	8.8	3/28	3.6	-	-
Missouri Main Stem								
10C01M	Kings Hill	7420	48	11.8	3/30	7.8	-	-
12C08M	Stemple Pass	6350	48	5.9	4/3	4.7	-	-
Yellowstone								
10D11M	Battle Ridge	6020	48	15.4	3/25	9.9	14.3	-
10D07M	Northeast Entrance	7350	48	9.4	3/30	8.0	7.0	-
10C04M	Shields River	5850	48	17.8	3/26	9.8	14.1	-

**AVERAGE FOR PERIOD OF RECORD

RESERVOIR STORAGE DATA

AS OF MARCH 31, 1964

(1000 Acre Feet)

BASIN	RESERVOIR	USEABLE CAPACITY	USEABLE STORAGE THIS YEAR	USEABLE STORAGE LAST YEAR	USEABLE STORAGE AVERAGE
COLUMBIA RIVER BASIN					
Flathead	Hungry Horse	3,428.0	2,099.0	2,842,0	2,177.0**
	Flathead Lake	1,791.0	722.9	758.8	628.8
	Camas 1/	45.2	19.4	29.6	26.5
	Mission Valley 2/	100.3	22.6	32.8	38.6
Clark Fork	Georgetown Lake	31.0	25.6	23.3	21.6
	Noxon	334.6	155.2	179.9	-
Bitterroot	Como	34.9	9.6	24.2	12.4
	Painted Rocks	31.7	-	-	11.6
MISSOURI RIVER BASIN					
Beaverhead	Lima	84.0	15.0	28.3	33.9
Ruby	Ruby	38.8	-	27.0	26.5**
Madison	Hebgen Lake	384.8	211.3	272.4	201.7
	Ennis Lake	41.0	39.2	38.5	35.3
Gallatin	Middle Creek	8.0	3.2	5.1	4.1**
Missouri	Canyon Ferry	2,043.0	1,726.0	1,962.0	1,585.0**
	Hauser & Helena	61.9	52.5	46.0	4[illegible].3
	Lake Helena	10.4	7.2	5.2	5.5**
	Holter Lake	81.9	22.9	57.4	54.3
	Smith River	10.7	7.6	9.0	6.5**
	Ackley Lake	5.8	-	3.4	3.9
	Durand	7.0	4.5	7.0	5.3
	Martinsdale	23.1	7.6	9.4	10.1
	Deadman's Basin	72.2	55.0	57.4	46.2**
	Fort Peck	19,410.0	11,700.0	10,070.0	11,610.0
Sun-Teton	Gibson	105.0	17.9	46.2	66.4
	Willow Creek	32.3	21.2	27.2	20.1
	Pishkun	32.0	17.1	18.0	18.6
Marias	Lower Two Medicine	16.6	-	1.9	-
	Four Horns	19.2	-	-	8.7
	Swift	30.0	11.9	14.1	24.7
	Lake Francis	112.0	34.3	66.6	96.0
	Tiber	1,313.0	650.3	660.5	653.8**
Milk	Fresno	127.2	36.6	49.0	85.6
	Nelson	66.8	30.0	42.5	33.7
	Lake Sherburne	66.1	18.4	38.7	22.8
Yellowstone	Mystic Lake	20.8	5.7	6.5	5.7
	Tongue River	68.0	-	-	18.1
	Cooney	27.5	19.1	19.0	12.7

1/Sum of four small reservoirs on west side of Flathead Lake.
2/Sum of eight small reservoirs in Mission Valley not including Jocko Lake.

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD). **AVERAGE FOR PERIOD OF RECORD

Agencies Cooperating in Collecting Data Contained in this Bulletin

U. S. Forest Service
Region 1, Missoula, Montana

U. S. Geological Survey
Helena, Montana

U. S. Army Corps of Engineers
Portland, Oregon
Seattle, Washington
Omaha, Nebraska
Riverdale, N. D.

U. S. Indian Irrigation Service
St. Ignatius, Montana

U. S. Weather Bureau
Helena, Montana

U. S. Bureau of Sports Fisheries and Wildlife
Red Rock Lakes Refuge
Monida, Montana

U. S. Bureau of Reclamation
Billings, Montana
Boise, Idaho

Montana Power Company
Butte, Montana

Agricultural Experiment Station
North Montana Branch Station
Havre, Montana

Agricultural Experiment Station
North Montana Branch Station
Havre, Montana

National Park Service
Yellowstone National Park
Glacier National Park

Montana Experiment Station
Montana State College
Bozeman, Montana

Bonneville Power Administration
Portland, Oregon

Montana State University
School of Forestry
Missoula, Montana

Soil Conservation Service
Montana, Wyoming, Idaho

Soil Conservation Districts
Montana Counties

Johnson Flying Service, Inc.
Missoula, Montana

Water Rights Branch, Dept. of Lands and Forests
Victoria, British Columbia

Department of Northern Affairs and National Resources
Calgary, Alberta

State Engineer
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COOPERATIVE SNOW SURVEYS

Furnishes the basic data necessary for forecasting water supply for irrigation, domestic and municipal water supply, hydro-electric power generation , navigation , mining and industry

"The Conservation of Water begins with the Snow Survey"